State of California

Memorandum

Mr. Stein Buer
Assistant Director
CALFED Bay-Delta Program

Date : April 11, 1997

From : Department of Fish and Game

Subject : Status Reports on Storage and Conveyance Components Inventories and Technical Studies for the Storage and Conveyance Refinement Process

The Department of Fish and Game has reviewed the subject documents and offers the following comments to assist the CALFED Bay-Delta Program in its efforts to define a reasonable range of alternatives to be carried forward for analysis in the Programmatic EIR/EIS. Our comments are provided separately for each of the documents.

We have also attached a list of proposed operating criteria for the Dual Conveyance Alternatives. These criteria could help form the basis of one or two sets of operating rules that could assist the Program is narrowing the ranges of impacts associated with the three alternatives.

CALFED Bay-Delta Program
Storage and Conveyance Components Inventories

The definition of the area covered by the East Side of the Sacramento Valley Region makes including the Cosumnes River in that region confusing. Perhaps it should be included in the San Joaquin Valley Region along with the Mokelumne River.

The conveyance alternatives for storage north of the Delta identifies the off-stream storage as being in the western foothills of the Coast Range. Should this be changed to the eastern foothills of the Coast Range?

The attribute matrices include brief descriptions of the environmental concerns of each component. These descriptions need to be used carefully since the level of knowledge varies significantly among the components.

Surface Storage Components

In-Delta storage should be sited in the Delta south of the San Joaquin River in locations close to the water project intakes or connected directly to the projects. Are the estimated active storage volumes for the Lake Berryessa Enlargement of over eleven million acre-feet possible to sustain by diverting "surplus" flows from the Sacramento River? In our view, the list of issues related to the Chain-of-Lakes alternative is incomplete and needs to be expanded. Water quality issues and reliability are two that should be added.

Additional impacts to ecological processes should be added to some of the storage components, particularly on-stream reservoirs such as the Cottonwood Creek Reservoir Complex. Processes such as streamflow and gravel recruitment would be impacted. Impacts to spring-run chinook salmon for the Deer Creek Meadows Reservoir should also be noted.

Ground Water Storage Components

If the Butte Basin component does not include a conjunctive use program similar to the "Oro-Chico" proposal that has received some preliminary evaluation, consideration should be given to including it. Besides water supply, benefits could accrue for fall-run and spring-run salmon in Butte Creek and water supplies for wetlands could be ensured.

Figure 2 should be modified to ensure that the features listed in Table 2 are shown in their correct location. For instance, it appears that the Stony Creek Fan and Thomes Creek Fan are switched in Figure 2.

Conveyance Components

Table 3 and Figure 3 should depict a component which describes a screened intake at Hood with an isolated canal of between 3,000 to 5,000 cfs to the Mokelumne River near New Hope Tract. The use of Snodgrass Slough may present a significant adverse impact on existing high quality habitat so alternative approaches should also be evaluated.

A facility that allows the intake of water from Italian Slough through a screened facility to the State Water Project export facilities should be included in the inventory.

Components which convey water directly from the San Joaquin River in the Delta should be added to the inventory.

The intertie between the SWP and CVP in the Delta should be added to the inventory and a clear description provided for how it is configured and how it could be operated. For instance, it isn't clear to us if water is drawn through the Tracy fish facility into Clifton Court Forebay and subsequently through the SWP fish facility for export south or another approach is envisioned. A clearer description of the intertie and expected benefits would help.

H-002067

Technical Studies for the Storage and Conveyance Refinement Process

Range of Alternatives

The Department remains concerned that a full range of alternatives are not being carried forward for analysis. We recommend specifically that a variation of Alternative 3E be included with a 10,000 cfs isolated facility and a separate screened intake at Hood of between 3,000 to 5,000 cfs into the Mokelumne River near New Hope Tract. In addition, a facility that allows the intake of water at lower export rates (e.g. 2,000 cfs) from Italian Slough through a screened facility to the State Water Project export facilities should be included in the configuration. We further recommend that the "South Delta Improvements" be customized to provide for a Middle River Barrier for agricultural supplies, eliminate the remaining agricultural barriers, and delete the dredging and intake relocation/enlargement. Furthermore, north-of-Delta storage and south-of-Delta storage of 1.0 to 1.5 MAF should be assessed as part of the alternative. The groundwater storage, upstream San Joaquin storage, and in- Delta storage as described in Alternative 3G should be carried into the alternative as well. Operation strategies for these facilities could follow the criteria proposed in the attachment to this memorandum.

The isolated facility alternatives should be assessed assuming a range of water quality criteria e.g. the existing water quality criteria remain in place; the inflow/export criteria in August through October are increased by 10 % for water diverted through an isolated facility and inflow/export criteria in the Feb through June period reduced by 25 % to 50 % for water diverted from Delta channels. Likewise outflow and X2 could be assessed using existing standards and other scenarios such as a relaxation in the September through November period with improvements of 10 to 20 % during other months.

Alternatives for PEIR/EIS Evaluation

On page 5 of this section the second paradigm for fisheries needs to recognize that other fish groups besides anadromous can benefit by restoring internal Delta hydraulic processes. Estuarine fish such as longfin smelt, delta smelt, and splittail are examples.

The common assumptions listed on page 6 several should be modified to be consistent with the ERPP. For instance, the assumption about the width of waterside berms being 20 feet is too narrow to provide significant fish and wildlife benefits. Ranges consistent with the ERPP should be substituted. It isn't clear that an assumption should be made that all breached levees should be armored with rip rap.

System Modeling

The authors of this section state that water supply benefits were insensitive to changes in the maximum ratios of isolated conveyance to total south Delta export and the maximum through Delta conveyance constraint. These changes would, however, have measurable effects on ecological processes and functions. Given that, any further analysis should be revised to incorporate operation criteria like those suggested in the approach attached to this memorandum. The authors make tentative observations that the water supply benefits occur only when isolated conveyance is excluded from the 1995 WQCP restrictions and strategic operation of the Delta Cross Channel gates. First, a description of "strategic operation" should be provided. Second, an explanation should be provided for why applying the WQCP criteria would negate water supply benefits. This explanation should separate out the effects of applying the WQCP export/inflow criteria versus the export restrictions during the April/May pulse flow period. Perhaps after the studies described in Appendix 1 are complete, additional sensitivity runs could be performed using alternative inflow/export ratios for selected months.

Operating Parameters

It isn't clear how a given set of operational criteria, designed to avoid or minimize adverse impacts on aquatic resources or designed to restore and enhance conditions, can be incorporated into an alternative plan unless features such as the storage capacity upstream and downstream of the Delta are better defined. We anticipate that part of the alternative evaluation process may depend on an iterative evaluation which could begin with targets for the ecosystem and defining a set of proposed operating rules, which combined with a suite of conveyance and surface and groundwater storage components, would be modeled to assess performance for the ecosystem and the other three resource areas. We are concerned that when this assessment is done, at least in a preliminary way, with specific storage combinations besides 3 MAF upstream and 2 MAF downstream, some combinations of operating criteria and storage conveyance may ultimately not be effective at accomplishing the program's mission.

The Department has, for the dual conveyance alternative, suggested operating criteria and associated facilities. These are attached to this memorandum.

Spreadsheet Post-Processing

Several immediate concerns arise about the process used to refine the ranges of storage and analyze the effects of storage operation rules and goals. Fundamental to the restoration of the Bay-Delta is the improvement of its biological processes and functions. This restoration effort should evaluate other options for obtaining environmental water in addition to setting aside a portion of new water supplies for the environment from new storage capacity.

We question whether the user-defined environmental demands approach and values chosen is the most effective mechanism for defining ecosystem restoration needs. The document explains that environmental water supply benefits are achieved by exchanging environmental supplies with south-of-Delta agricultural and urban water users. This may not represent a complete view of how environmental water should be evaluated in all cases. Care must be taken to define operating criteria which protect and restore the Bay-Delta ecosystem, such as avoiding large diversions during critical periods and maintaining streamflow patterns and outflows that support ecosystem functions. Supplies that can be stored beyond those criteria should be shared between the environment and urban and agricultural users. Any enhancement of environmental conditions beyond the levels described above could also be accomplished by using the exchanges described.

To the extent that the spreadsheet report-processing effort could be affected by these concerns we believe they should be resolved before the effects of joint storage operations are completed for both environmental and agricultural and urban water supply benefits for downstream of Delta storage. These issues are also a concern with respect to upstream of Delta storage, both off-stream and on-stream.

Delta Modeling

The alternatives evaluated in this section do not match the alternatives chosen for evaluation in other sections. The implications of the results, therefore, are not very clear. For instance, enlargement of the South Fork of the Mokelumne River is modeled yet alternatives 2A and 2B and alternatives 3A through 3E enlarge the North Fork.

Components Lists (starting on page 7) - Note the following comments by alternative:

Alternatives 1A and 1B- In our view changes in existing reservoir operations should also be included.

Alternative 1B - An explanation should be provided for the need to have a 10,300 cfs capacity intertie between the Tracy Pumping Plant and Clifton Court Forebay. A clearer description of this component, which addresses issues related to fish screen adequacy would be beneficial.

Alternatives 2A , B, and C - The descriptions should more clearly explain which channel is proposed for enlargement below Lambert Road. We are concerned that channel enlargement may not be consistent with maintaining existing fish and wildlife values, particularly in Snodgrass Slough.

Alternative 2C - This alternative has the characteristics of an isolated facility for in-Delta diversions south of the intake locations. Also, we were unable to find reference to the western and eastern 15,000 cfs intakes in the inventories report. They should be included and mention made in the Component Specific Environmental Evaluation section of eliminating the 1,200 acre wildlife mitigation site on Palm Tract that would result from the western intake.

Improved through Delta Conveyance - The Component Specific Environmental Evaluation section should include reference to the elimination of significant acreages of wildlife habitat associated with existing agricultural operations. Mention should also be made of eliminating the 1,200 acre wildlife mitigation site on Palm Tract associated with alternatives 2D and 2E.

Alternative 3E - We presume it was deemed premature to include reference to opportunities associated with Alternative 3E to directly serve agricultural lands on Roberts and Union islands or to provide supplies to the East Bay Municipal Utility District at its junction with the Mokelumne River Aqueduct. These options could provide ecosystem benefits consistent with the ERPP by reducing entrainment into agricultural diversions, improving stream flows from the Mokelumne River, and helping to restore internal Delta channel hydraulics. At the appropriate time, we encourage CALFED to explore these possibilities.

All Alternatives - Any alternative which includes the Old River Fish Control Structure should describe that structure as having operable radial gates. The lift gates will not provide the operational flexibility needed to efficiently improve conditions for San Joaquin fish without adversely affecting other fish in the south and central Delta and degrading other critical ecological processes in those areas. Alternatives with reservoirs should describe those reservoir capacities in ranges. For instance Alternative 1C could be 1.5 to 3.0 MAF.

It isn't clear whether or how a conveyance facility alternatives will be modified in order to accommodate targets associated with the ERPP. In our view, some efforts should be undertaken now to ensure that restorations of processes such as flood plain inundation and habitats such as broad, contiguous bands of riparian are not precluded, either in or upstream of the Delta, by how an alternative is configured.

This concludes our comments. Thank you for providing us the opportunity to comment on these documents. Should you or your staff have any questions about our input please contact me or Mr. Frank Wernette at CALNET 8-423-7800.

Pete Chadwick
DFG/CALFED Liaison

Attachment

H-002071

bc: Mr. Frank Wernette, BDD
Mr. Jim White, ESD
Mr. Don Stevens, BDD
Mr. Kevan Urquhart, BDD
Mr. Dan Odenweller, IFD
Mr. Harry Rectenwald, R1
Mr. Ed Littrell, R2
Mr. Bill Loudermilk, R4
Mr. Alan Baracco, IFD

HKC97d66.wpd:bb\emc

H-002072